

IN THE CLAIMS:

1. (Previously Amended) A system for receiving broadcast satellite transmissions in one of an air-based, a land-based, and a sea-based vehicle, said system comprising:

an orientation system for determining at least a first orientation of the vehicle in three dimensions;

a controller in communication with said orientation system, said controller adapted to receive first orientation data corresponding to said first orientation of the vehicle and to receive first location data corresponding to a first location of the vehicle relative to a predetermined positioning system, wherein said controller utilizes said first orientation data and said first location data to determine first position control data;

a one dimensionally electronically-pointable antenna mounted upon a motorized turntable to provide two-dimensional pointing and adapted to receive said first position control data from said controller, wherein said one-dimensionally electronically-pointable antenna is pointable in two-dimensions in open-loop operation in accordance with said first position control data to receive a first direct broadcast satellite signal from a first satellite having a known location relative to said predetermined positioning system;

a direct broadcast satellite receiver adapted to process a first radio frequency signal corresponding to said first direct broadcast satellite signal received by said electronically-pointable antenna to produce at least one of the first audio output, a first video output, and a first data output-;

a closed-loop feedback system adapted to provide at least one output signal wherein said one dimensionally electronically pointable antenna is pointable in two-dimensions utilizing said at least one output signal in closed-loop operation to receive said first direct broadcast satellite signal; and,

a signal lock for automatically activating and deactivating said closed-loop feedback system in response to said first direct broadcast satellite signal received by said one dimensionally electronically-pointable antenna, wherein said system is in open-loop operation when said closed-loop feedback system is deactivated and in closed-loop operation when said closed-loop feedback system is activated.

2. (Previously Amended) A system as claimed in Claim 1, wherein said one dimensionally electronically-pointable antenna and said turntable are substantially flat.

3. (Previously Amended) A system, as claimed in Claim 2, wherein said at least one output signal controls a rotational orientation of said one-dimensionally electronically-pointable antenna on said turntable.

4. (Previously Amended) A system, as claimed in Claim 1, wherein said one dimensionally electronically-pointable antenna comprises one of a phased array antenna and a plasma grating antenna.

5. (Previously Amended) A system, as claimed in Claim 1, wherein said one dimensionally electronically-pointable antenna is substantially flat within a plane and is adapted to electronically point at a look-angle relative to said plane.

6. (Original) A direct broadcast satellite system, as claimed in Claim 1, wherein said orientation system comprises a first electronic compass and tilt-sensor.

7. (Original) A direct broadcast satellite system, as claimed in Claim 1, wherein said orientation system comprises a first solid-state electromagnetic field sensor and a first fluid-field tilt-sensor adapted to provide said first orientation data of the vehicle.

8. (Previously Amended) A direct broadcast satellite system, as claimed in Claim 1, wherein said controller comprises an open-loop control system adapted to process said first location data, said first location data received from a Global Positioning System receiver in communication with said controller, said first orientation data from said controller, and position and signal characteristic data corresponding to a first satellite to determine said first position control data comprising at least a first coarse look-angle position data to point said one dimensionally electronically-pointable antenna.

9. (Previously Amended) A direct broadcast satellite system, as claimed in Claim 8, wherein said signal lock detector is adapted for at least detecting a first loss of said first direct broadcast satellite signal to activate said open-loop operation.

10. (Previously Amended) A direct broadcast satellite system, as claimed in Claim 9, wherein said closed-loop feedback system is adapted for controlling a rotational orientation of said turntable and a look-angle of said electronically-pointable antenna.

11. (Currently Amended) A direct broadcast satellite system for receiving in a mobile craft a first signal from a first direct broadcast satellite having a known location relative to a predetermined positioning system, said system comprising:

an orientation system for determining at least a first orientation of the mobile craft in three dimensions;

a processor, in communication with said orientation system, for determining first position control data from at least first orientation data corresponding to said first orientation of the mobile craft and from first location data corresponding to a first location of the mobile craft relative to said predetermined positioning system, wherein said processor is adapted to receive a first input from a user, said first input corresponding to a selection of the first direct broadcast satellite; and

an electronically-pointable antenna, in communication with said processor, adapted to be pointed at the first direct broadcast satellite in accordance with said first position control data, wherein the first signal from the first direct broadcast satellite is receivable by said electronically-pointable antenna;

an open-loop control system adapted to process said first location data, said first location data received from a Global Positioning System receiver in communication with said controller, said first orientation data from said controller, and position and signal characteristic data corresponding to a first satellite to determine said first position control data comprising at least a first coarse look-angle position data to point said electronically-pointable antenna;

a closed-loop feedback system adapted to provide at least one output signal in response to said first direct broadcast satellite signal received by said electronically-pointable antenna, wherein said electronically pointable antenna is pointable in two dimensions utilizing said at least one output signal in closed-loop operation to receive said first direct broadcast satellite signal; and

a signal lock for automatically activating and deactivating said closed-loop feedback system in response to said first direct broadcast satellite signal received by said electronically-pointable antenna, wherein said system is in open-loop operation when said closed-loop feedback system is deactivated and in closed-loop operation when said closed-loop feedback system is activated.

12. (Canceled)

13. (Previously Amended) A direct broadcast satellite system as claimed in Claim 11, wherein said orientation system is adapted to determine a first true north orientation of the mobile craft from first magnetic north data, wherein said first true north orientation is used in determining said first orientation of said mobile craft.

14. (Previously Amended) A direct broadcast satellite system as claimed in Claim 11, wherein said processor includes a first memory for storing at least a first orbit position of the first direct broadcast satellite, wherein said first orbit position is used by said processor to determine said first position control data.

15. (Previously Amended) A direct broadcast satellite system as claimed in Claim 11, further comprising a Global Positioning System receiver in communication with said processor for receiving at least first location information of the mobile craft, wherein said processor uses said first location information to determine said first position control data.

16. (Previously Amended) A direct broadcast satellite system as claimed in Claim 11, further comprising a direct broadcast receiver for processing a first radio frequency signal corresponding to said first direct broadcast satellite signal received by said electronically-pointable antenna to produce at least one of the first audio output, a first video output, and a first data output.

17. (New) A system for receiving satellite transmissions in a vehicle, said system comprising:

a one dimensionally electronically-pointable antenna mounted to a motorized turntable to provide two-dimensional pointing;

an open-loop control system adapted to point said electronically-pointable antenna at a satellite, wherein said open-loop control system processes orientation data relative to a predetermined positioning system of a vehicle provided by a vehicle orientation determination system, wherein said open-loop control system processes location data relative to said predetermined positioning system of said vehicle provided by a vehicle location determination system, wherein said open-loop control system processes satellite position data for said satellite relative to said predetermined positioning system based on position data of said satellite stored in a first memory, wherein said open-loop control system is adapted for controlling a rotational orientation of said turntable and a look-angle of said electronically-pointable antenna based on said processing of vehicle orientation, vehicle location, and satellite position data;

a closed-loop control system adapted to point said electronically-pointable antenna at said satellite, wherein said closed-loop control system is adapted for controlling a rotational orientation of said turntable and a look-angle of said electronically-pointable antenna based on a first received satellite signal characteristic;

a signal lock for automatically switching between said open-loop and closed-loop control systems in response to said first received satellite signal characteristic; and

a direct broadcast receiver for processing a signal from said satellite to produce at least one of the first audio output, a first video output, and a first data output.

18. (New) A system for receiving satellite transmissions in a vehicle as claimed in Claim 17, wherein said first received satellite signal characteristic is signal strength.

19. (New) A system for receiving satellite transmissions in a vehicle as claimed in Claim 18, wherein said one dimensionally electronically-pointable antenna mounted upon said motorized turntable are substantially flat and conformal to a surface of said vehicle.

20. (New) A system for receiving satellite transmissions in a vehicle as claimed in Claim 19, wherein said vehicle orientation determination system comprises an electronic compass and tilt sensor adapted to provide said orientation data.

21. (New) A system for receiving satellite transmissions in a vehicle as claimed in Claim 19, wherein said vehicle orientation determination system comprises a solid-state electromagnetic field sensor and a fluid-filled tilt-sensor adapted to provide said orientation data.

22. (New) A system for receiving satellite transmissions in a vehicle as claimed in Claim 19, wherein said vehicle location determination system comprises a Global Positioning System receiver to provide said location data.

23. (New) A system for receiving satellite transmissions in a vehicle as claimed in Claim 19, wherein said closed-loop control system is capable of controlling said rotational orientation of said turntable and said look-angle of said electronically-pointable antenna simultaneously.

24. (New) A system for receiving satellite transmissions in a vehicle as claimed in Claim 19, wherein said open-loop control system is capable of controlling said rotational orientation of said turntable and said look-angle of said electronically-pointable antenna simultaneously.